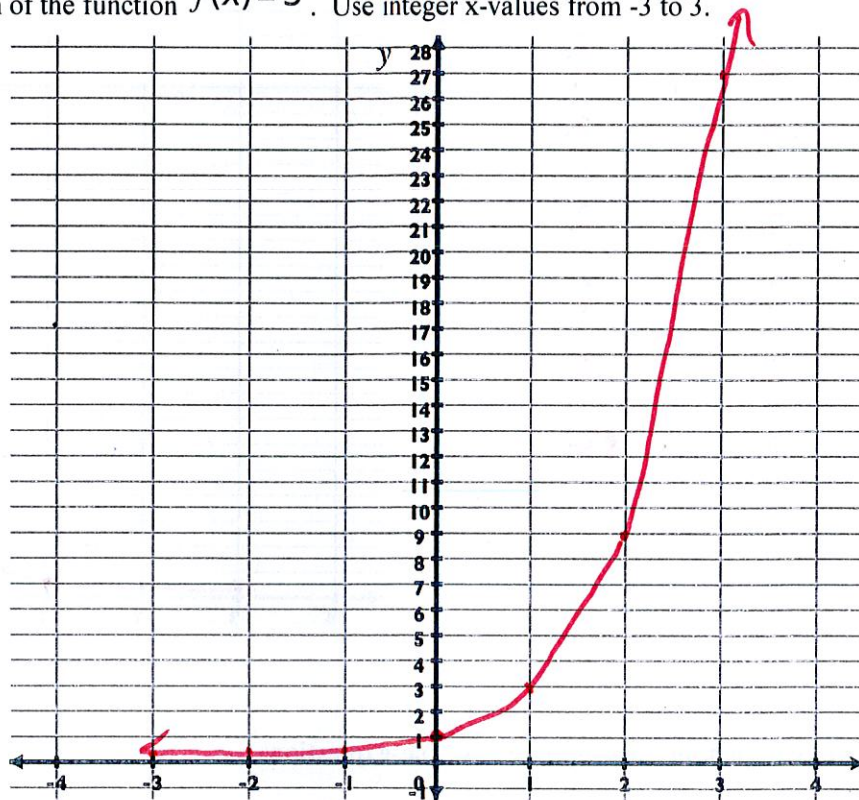


Name: Mr. Davis solution  
Date: \_\_\_\_\_

## Graphing Exponentials Homework

**Directions:**Make a data table, and then draw the graph of the function  $f(x) = 3^x$ . Use integer x-values from -3 to 3.

x	y
-3	$\frac{1}{27}$
-2	$\frac{1}{9}$
-1	$\frac{1}{3}$
0	1
1	3
2	9
3	27



After completing the graph, answer these questions.

1. Complete the end-behavior statements about the graph of
- $f(x)$
- :

As  $x \rightarrow -\infty$ ,  $y \rightarrow 0$  As  $x \rightarrow +\infty$ ,  $y \rightarrow \infty$ 

2. What are the coordinates of the y-intercept? Why is it there?

 $(0, 1)$  when  $x=0$ , then  $y = 3^0 = 1$ 

3. Explain why there aren't any x-intercepts.

 $y=0$  on the x-axis  
 $3^x$  is never zero, therefore,  $y$  is never zero, therefore the curve never crosses the x-axis

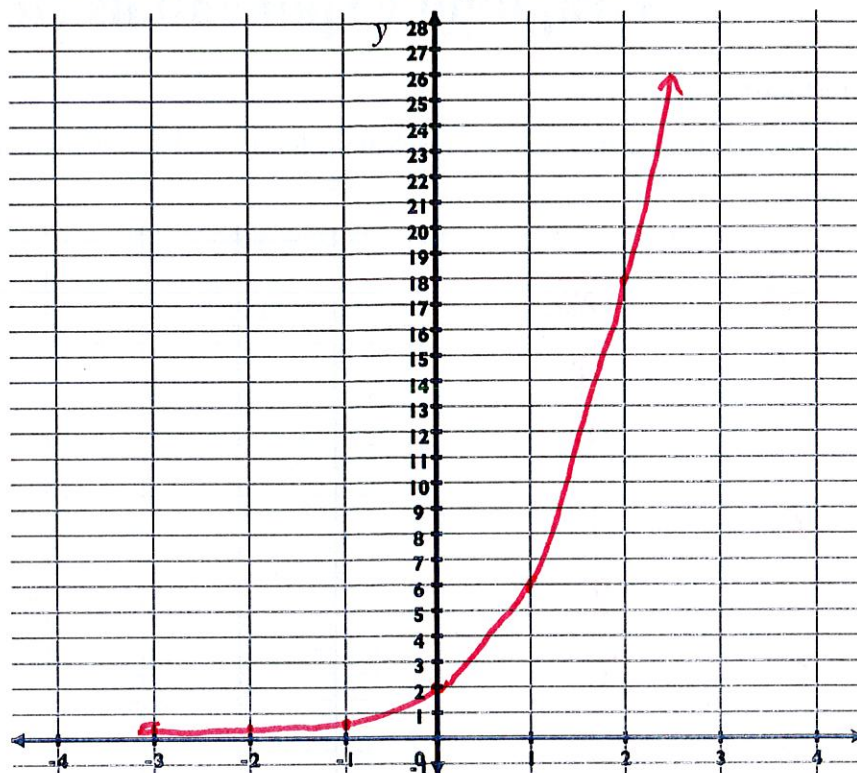
## Algebra 2

## Exponents Day 30: Introduction to Exponential Functions Homework

## Directions:

Make a data table, and then draw the graph of the function  $f(x) = 2(3)^x$ . Use integer x-values from -3 to 3.

x	y
-3	$\frac{2}{27}$
-2	$\frac{2}{9}$
-1	$\frac{2}{3}$
0	2
1	6
2	18
3	54



After completing the graph, answer these questions.

1. Complete the end-behavior statements about the graph of  $f(x)$ :

As  $x \rightarrow -\infty$ ,  $y \rightarrow 0$       As  $x \rightarrow +\infty$ ,  $y \rightarrow \infty$

2. What are the coordinates of the y-intercept? Why is it there?

$(0, 2)$  when  $x=0$ , then  $y = 2(3)^0 = 2(1) = 2$